

What is claimed is:

- 1) A carrier device (1) for a biological preparation (5) which can be cut by laser microdissection and which is located on a freely suspended, laser light-absorbing film (3) mounted on a frame-like holder, wherein the frame-like holder is substantially in the form of a wall (2) of a petri dish whose bottom is completely or partially omitted; and the missing bottom is replaced exclusively by the laser light-absorbing film (3).
- 2) The carrier device (1) as recited in Claim 1, wherein the entire bottom of the petri dish is formed by the laser light-absorbing film (3).
- 3) The carrier device (1) as recited in Claim 1, wherein the laser light-absorbing film (3) is a polyethylene naphtalate film (PEN).
- 4) The carrier device (1) as recited in Claim 1, wherein the polyethylene naphtalate film has a thickness of 1.35  $\mu\text{m}$  or 2.5  $\mu\text{m}$ .
- 5) The carrier device (1) as recited in Claim 1, wherein the laser light-absorbing film (3) is welded to the wall (2) of the petri dish.
- 6) The carrier device (1) as recited in Claim 1, wherein the wall (2) of the petri dish and the laser light-absorbing film (3) are adhesively bonded together.
- 7) The carrier device (1) as recited in Claim 6, wherein bonding is accomplished with an adhesive film (8) in the form of a template in such manner that that the adhesive film (8) is bonded on one side to the cylindrical wall (2) and, on the other side, to the laser light-absorbing film (3).
- 8) The carrier device (1) as recited in Claim 1, wherein the wall (2) of the petri dish is cylindrical in shape; and the film (3) is applied to a ring-shaped holding member (10) in a preliminary process using welding or adhesive bonding techniques; the ring-shaped holding member having a diameter

that is matched to the cylindrical wall (2) of the petri dish, and further having a snap-in groove (11) that allows the wall (2) of the petri dish to snap into the ring-shaped holding member (10), resulting in a liquid-tight releasable connection between the wall (2) of the petri dish and the ring-shaped holding member (10) provided with the laser-cuttable film bottom (3).

9) The carrier device (1) as recited in one of the preceding claims, wherein the laser light-absorbing film (3) is made hydrophilic.

10) The carrier device (1) as recited in one of the preceding claims, wherein the laser light-absorbing film (3) carries a nutrient medium for cell culture.

11) The carrier device (1) as recited in Claim 10, wherein the nutrient medium is in the form of a nutrient liquid.

12) The carrier device (1) as recited in Claim 11, wherein the nutrient medium is in the form of a nutrient gel.

13) The use of a laser microdissection device for laser microdissection of living biological cell cultures in which device a cutting, focused laser beam (17) is directed through an objective (19) onto a biological preparation (5) from above; a preparation region of interest being encircled by a complete cut line and separated from its surrounding area, wherein a preparation (5) in the form of a living biological cell culture is located on a laser light-absorbing film (3) mounted on a frame-like holder; the frame-like holder being substantially in the form of a wall (2) of a petri dish, and the laser light-absorbing film (3) forming the bottom of the petri dish.

14) A laser microdissection method for separating a preparation region of interest from a living biological preparation; the preparation region of interest being cut out by a laser beam producing a cut line,  
wherein

- the living biological preparation (5) is located on a freely suspended laser light-absorbing film (3) mounted on a frame-like holder; the frame-like holder being substantially

in the form of a wall (2) of a petri dish, and the laser light-absorbing film (3) forming the bottom of the petri dish; and

- the preparation region of interest falls into a collection container located underneath after the cut line is completed.